WHAT IS CLAIMED IS:

1. A rotary electric machine comprising:

a housing;

a stator core disposed in the housing;

a bolt having an enlarged diameter part for fixing the stator core to the housing by pressing one axial end portion of the stator core by the enlarged diameter part; and

an intermediate member provided at a contact portion between the enlarged diameter part of the bolt and the axial end portion of the stator core, the intermediate member being softer than the enlarged diameter part of the bolt.

2. The rotary electric machine as in claim 1, wherein the stator core is fixed to the housing at a plurality of locations spaced apart at equal angular intervals on a periphery which has a slightly larger diameter than that of an outer periphery of the stator core, the bolt being provided at each of the locations.

3. The rotary electric machine as in claim 1, wherein a step is provided at an inner peripheral portion of the housing to receive another axial end portion of the stator core, and the stator core is sandwiched between the step and the enlarged diameter part through the intermediate member.

4. A rotary electric machine comprising:

a housing;

a stator core disposed in the housing; and

a bolt having an enlarged diameter part for fixing the stator core in the housing by pressing one axial end portion of the stator core by the enlarged diameter part,

wherein the stator core has a cavity at a contact portion between the enlarged diameter part and the axial end portion of the stator core.

5. The rotary electric machine as in claim 4, wherein the stator core is fixed to the housing at a plurality of locations spaced apart at equal angular intervals on a periphery which has a slightly larger diameter than that of an outer periphery of the stator core, the bolt being provided at each of the locations.

6. The rotary electric machine as in claim 4, wherein a step is provided at an inner peripheral portion of the housing to receive another axial end portion of the stator core, and the stator core is sandwiched between the step and the enlarged diameter part.

7. A rotary electric machine comprising:

a housing having a cylindrical wall in which a bolt hole is formed in an axial direction inside an inner periphery of the wall, the housing having a step on the inner periphery at an axial end side;

a stator core fit in the housing in contact with the inner periphery of the wall, an outer peripheral part of one axial end of the stator core being in contact with the step of the housing;

a bolt threaded into the bolt hole and having an enlarged

head part which presses an outer peripheral part of another axial end of the stator core in the axial direction; and

an intermediate member interposed between the enlarged part of the bolt and the outer peripheral part of the another axial end of the stator core, the intermediate member being deformable.

8. A rotary electric machine comprising:

a housing having a cylindrical wall in which a bolt hole is formed in an axial direction inside an inner periphery of the wall, the housing having a step on the inner periphery at an axial end side;

a stator core fit in the housing in contact with the inner periphery of the wall, an outer peripheral part of one axial end of the stator core being in contact with the step of the housing; and

a bolt threaded into the bolt hole and having an enlarged head part which presses an outer peripheral part of another axial end of the stator core in the axial direction,

wherein the stator core has a cavity on the outer peripheral part of the another axial end to receive the enlarged head part therein.

9. The rotary electric machine as in claim 8, wherein the cavity is formed only at a location where the enlarged head part of the bolt contacts the stator core.